WHAT IS CLAIMED IS:

1. An automotive alternator comprising:

a rotor fastened to a shaft rotatably supported by a front bracket and a rear bracket, said rotor having a pair of Lundell-type pole cores disposed inside said brackets;

a stator supported by said brackets, said stator being disposed so as to cover an outer circumference of said rotor, said stator comprising:

a cylindrical stator core in which a plurality of slots having grooves lying in an axial direction are disposed circumferentially so as to open onto an inner circumferential side; and

a stator coil installed in said stator core so as to constitute a predetermined winding construction;

a pulley fastened to a front end of said shaft; and

a rectifier disposed at a rear end of said rotor,

wherein

a plurality of front-end and rear-end air intake apertures are disposed in axial end surfaces of said front and rear brackets, respectively;

a plurality of front-end and rear-end air discharge apertures are disposed in radial side surfaces of said front and rear brackets, respectively; and

front-end and rear-end blowing means are disposed at front and rear axial ends of said rotor, respectively,

whereby a front-end ventilation pathway in which a cooling air flow flows through said front-end air intake apertures into said front-end bracket and flows out through said front-end air discharge apertures, a rear-end ventilation pathway in which a cooling air flow flows through said

rear-end air intake apertures into said rear-end bracket and flows out through said rear-end air discharge apertures, and a front-to-rear ventilation pathway in which a cooling air flow flows through an inner side of said rotor between said front end and said rear end each is generated by operation of said blowing means,

wherein a capacity of said rear-end blowing means is greater than a capacity of said front-end blowing means, and a front-end air intake flow rate is greater than a rear-end air intake flow rate.

2. The automotive alternator according to Claim 1 wherein a front-end air discharge flow rate is greater than a rear-end air discharge flow rate.

3. The automotive alternator according to Claim 1 wherein said front-to-rear ventilation pathway is blocked.

4. The automotive alternator according to Claim 1 wherein said front-end and rear-end blowing means are said Lundell-type pole cores or fans.

5. The automotive alternator according to Claim 1 wherein:

said front-end blowing means is one of said Lundell-type pole cores; and

said rear-end blowing means is a fan.

6. The automotive alternator according to Claim 1 wherein said front-end and rear-end blowing means are fans, each fan comprising:

a generally annular fan base portion;

a plurality of blade base plates extending radially outwards from outer circumferential edge portions of said fan base portion; and

a plurality of blades standing on an outer circumferential edge portion of each of said plurality of blade base plates.

7. The automotive alternator according to Claim 6 wherein said rear-

end fan is provided with a greater number of blades than said front-end fan.

8. The automotive alternator according to Claim 6 wherein a maximum blade height of said rear-end fan is greater than a maximum blade height of said front-end fan.

9. The automotive alternator according to Claim 6 wherein said blade base plates of said rear-end fan are formed into a shape which blocks valley portions between adjacent magnetic poles of said rotor.

10. The automotive alternator according to Claim 6 wherein a shielding plate is disposed for blocking air gaps formed by said blade base plates of said rear-end fan and valley portions between adjacent magnetic poles of said rotor.

11. The automotive alternator according to Claim 1 wherein said stator coil is constructed by:

inserting coil segments composed of short conductors formed into a general U shape from a first end of said stator core into slot pairs in which said slots in each pair are a predetermined number of slots apart; and

circumferentially bending and joining together free end portions of said coil segments extending outwards at a second end of said stator core from slots the predetermined number of slots apart so as to constitute the predetermined winding construction,

wherein turn-end coil ends formed by U-shaped turn ends of said coil segments are aligned in rows circumferentially to constitute a turn-end coil end group, and joint-end coil ends formed by said joining of said free end portions of said coil segments are aligned in rows circumferentially to constitute a joint-end coil end group.

12. The automotive alternator according to Claim 11 wherein said joint-

end coil end group of said stator coil is disposed at said front end of said stator core.

13. The automotive alternator according to Claim 1 wherein said stator coil is constructed by linking a plurality of winding sub-portions so as to constitute the predetermined winding construction,

wherein each of said winding sub-portions is constituted by one strand of wire constituted by a large number of straight portions housed inside said slots and a large number of turn portions linking together end portions adjacent straight portions outside said slots, said strand of wire being installed in said stator core by housing said straight portions so as to form different layers relative to a slot depth direction in slots the predetermined number of slots apart, and coil ends formed by said turn portions are aligned in rows circumferentially to constitute front-end and rear-end coil end groups of said stator coil.

14. An automotive alternator comprising:

a rotor fastened to a shaft rotatably supported by a front bracket and a rear bracket, said rotor having a pair of Lundell-type pole cores disposed inside said brackets;

a stator supported by said brackets, said stator being disposed so as to cover an outer circumference of said rotor, said stator comprising:

a cylindrical stator core in which a plurality of slots having grooves lying in an axial direction are disposed circumferentially so as to open onto an inner circumferential side; and

a stator coil installed in said stator core so as to constitute a predetermined winding construction;

a pulley fastened to a front end of said shaft; and

a rectifier disposed at a rear end of said rotor,

wherein

a plurality of front-end and rear-end air intake apertures are disposed in axial end surfaces of said front and rear brackets, respectively;

a plurality of front-end and rear-end air discharge apertures are disposed in radial side surfaces of said front and rear brackets, respectively; and

front-end and rear-end blowing means are disposed at front and rear axial ends of said rotor, respectively,

whereby a front-end ventilation pathway in which a cooling air flow flows through said front-end air intake apertures into said front-end bracket and flows out through said front-end air discharge apertures, a rear-end ventilation pathway in which a cooling air flow flows through said rear-end air intake apertures into said rear-end bracket and flows out through said rear-end air discharge apertures, and a front-to-rear ventilation pathway in which a cooling air flow flows through an inner side of said rotor between said front end and said rear end each is generated by operation of said blowing means,

wherein a capacity of said rear-end blowing means is greater than a capacity of said front-end blowing means, and a front-end air discharge flow rate is greater than a rear-end air discharge flow rate.

15. The automotive alternator according to Claim 14 wherein said front-end and rear-end blowing means are fans, each fan comprising:

a generally annular fan base portion;

a plurality of blade base plates extending radially outwards from outer circumferential edge portions of said fan base portion; and

a plurality of blades standing on an outer circumferential edge portion of each of said plurality of blade base plates.

16. The automotive alternator according to Claim 15 wherein said rear-end fan is provided with a greater number of blades than said front-end fan.

17. The automotive alternator according to Claim 15 wherein a maximum blade height of said rear-end fan is greater than a maximum blade height of said front-end fan.

18. The automotive alternator according to Claim 15 wherein said blade base plates of said rear-end fan are formed into a shape which blocks valley portions between adjacent magnetic poles of said rotor.

19. The automotive alternator according to Claim 15 wherein a shielding plate is disposed for blocking air gaps formed by said blade base plates of said rear-end fan and valley portions between adjacent magnetic poles of said rotor.